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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,259	04/14/2004	Joerg Wilken	H26983	6491
7590 Scott Jacobson, Esq. Honeywell International Inc. Law Department, AB2 P.O. Box 2245 Morristown, NJ 07962-2245			EXAMINER GALE, KELLETTE	
			ART UNIT 1621	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/06/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/824,259	Applicant(s) WILKEN ET AL.	
	Examiner Kellette Gale	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on December 28, 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-19 and 22-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,2,4-19 and 22-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of the claims***

Claims 3 and 20-21 are cancelled.

Claims 1-2, 4-19, and 22-32 are pending.

### ***Response to Amendment***

Due to the newly amended claims, applicant's arguments, see remarks, filed December 28, 2006, have been fully considered and are persuasive. The rejections found in the office action dated September 26, 2006 have been withdrawn. However, new grounds of rejection can be found below.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1-2, and 4-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs et al (Chem. Comm. 2002 1062-1063) in view of Aizikovich et al (XP-002339135 1997 563-564).

Applicant claims a process for the production of a compound comprising reacting a bromobenzene reactant with an alkyl acrylate in an organic polar solvent and in the presence of a palladium catalyst for a Heck reaction, a base, and a phase transfer catalyst to produce an alkyl cinnamate ester compound.

**Determination of the scope and content of the prior art**

**(MPEP §2141.01)**

Jacobs et al teaches the reaction of bromobenzene in the presence n-butyl acrylate, a quaternary ammonium compound (tetraalkylammonium salt), tributylamine, and a palladium catalyst (please see Table 2 and Reaction conditions).

Aizikovich et al teaches a similar reaction where a fluorinated bromobenzene compound is reacted with acrylic acid, a palladium catalyst ( $\text{Pd}(\text{Oac})_2$ ), polar organic solvent DMF (dimethylformamide), and a base to form cinnamic acid. Aizikovich et al shows that a low amount of catalyst can be used with this type of reaction.

**Ascertainment of the difference between the prior art and the claims**

**(MPEP §2141.02)**

Aizikovich et al does not teach a phase transfer catalyst. Also, Aizikovich et al teaches the reaction with acrylic acid to make an alkyl cinnamate acid rather than the ester. Jacobs et al does not teach the polar solvent or minimal use of the palladium catalyst.

**Finding of prima facie obviousness**

**Rational and Motivation (MPEP §2142-2143)**

Since looking at the reactions taught by Jacobs et al and Aizikovich et al show that the reaction takes place at the bromine substituent of the bromobenzene and at the alkyl of the acrylic acid, it would be obvious for one of ordinary skill in the art to combine both teaching in order to arrive at an alkyl cinnamate ester using minimal palladium catalyst and a polar organic solvent.

One would be motivated to do so as both Jacobs et al and Aizikovich et al have shown success in both of their reactions. Also, merely modifying the process conditions such as temperature and concentration is not a patentable modification absent a showing of criticality. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Claims 22-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs et al in view of Aizikovich et al and further in view of Wada et al (JP 60-112736).

Applicant claims the same as stated above with a further limitation of hydrolyzing the alkyl cinnamate ester compound to produce cinnamic acid.

**Determination of the scope and content of the prior art**

**(MPEP §2141.01)**

Jacobs et al and Aizikovich et al are the same as applied above.

Wada et al teaches a process of hydrolyzing a cinnamic acid ester in the presence of an acid to obtain cinnamic acid.

**Ascertainment of the difference between the prior art and the claims**

**(MPEP §2141.02)**

Jacobs et al and Aizikovich et al do not teach the hydrolyzation of the cinnamic acid ester in the presence of an acid to obtain cinnamic acid. Wada et al does not teach a bromobenze compound being reacted with a phase transfer catalyst in the presence of a base and palladium catalyst to produce the cinnamic acid ester.

**Finding of prima facie obviousness****Rational and Motivation (MPEP §2142-2143)**

If one of ordinary skill in the art wanted to prepare cinnamic acid from the ester one of ordinary skill in the art would find it obvious to combine the teachings of Jacobs et al with that of Aizikovich et al and Wada et al. One of ordinary skill in the art would be motivated to do so if one wanted to prepare a cinnamic acid from the ester.

**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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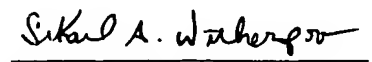
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kellette Gale whose telephone number is (571) 272-8038. The examiner can normally be reached on M-F (6:30am-3:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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FOR THURMAN K. PAGE

**February 23, 2007**